

Message

From: Idsal, Anne [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B1BECA8121FB47A08E82B6BF2247A79B-IDSAL, ANNE]
Sent: 4/2/2020 1:44:44 PM
To: Campbell, Ann [Campbell.Ann@epa.gov]
CC: Moor, Karl [Moor.Karl@epa.gov]; Dominguez, Alexander [dominguez.alexander@epa.gov]; Harlow, David [harlow.david@epa.gov]; Raymond, Kelley [Raymond.Kelley@epa.gov]; Cory, Preston [Cory.Preston@epa.gov]; Landeene, Sarah [Landeene.Sarah@epa.gov]; Tardif, Abigale (Abbie) [Tardif.Abbie@epa.gov]; Shaw, Betsy [Shaw.Betsy@epa.gov]; Millett, John [Millett.John@epa.gov]; DeLuca, Isabel [DeLuca.Isabel@epa.gov]; Rakosnik, Delaney [rakosnik.delaney@epa.gov]; Jacks, Susan [Jacks.Susan@epa.gov]; Shoaff, John [Shoaff.John@epa.gov]
Subject: Re: FOR YOUR REVIEW: OAR Weekly Report

Looks good on my end.

Sent from my iPhone

On Apr 2, 2020, at 8:02 AM, Campbell, Ann <Campbell.Ann@epa.gov> wrote:

Light report this week. Please let me know if there's anything I missed.

- **Packages for Signature:**
 - MATS E-Reporting (Proposed Rule)
 - Fuels Regulatory Streamlining (Proposed Rule)
- **Packages at OMB for Review:**
 - MATS RTR & Cost Review (Final Rule: RECEIVED DATE 10/4/2019)
 - MATS Coal Refuse-Fired Units (Final Rule: RECEIVED 01/29/2020)
 - Boiler MACT (Proposed Rule: RECEIVED 02/7/2020)
 - Biogenic CO2 (Proposed Rule: RECEIVED 02/24/2020)
 - Granting Petitions to Add n-Propyl Bromide to the List of Hazardous Air Pollutants (Final Notice: RECEIVED 02/24/2020)
 - PM NAAQS (Proposed Rule: RECEIVED 03/04/2020)
- **Packages Heading to OMB Soon**

Ex. 5 Deliberative Process (DP)

Ann Campbell
Chief of Staff
EPA/Office of Air and Radiation
Office: 202 566 1370

Message

From: Idsal, Anne [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B1BECA8121FB47A08E82B6BF2247A79B-IDSAL, ANNE]
Sent: 4/10/2020 1:49:25 PM
To: Moor, Karl [Moor.Karl@epa.gov]; Gustafson, Kurt [Gustafson.Kurt@epa.gov]
Subject: FW: Update on Draft Guidance on CAA Section 179B Demonstrations
Attachments: Utah Petroleum and Mining Org Comments.pdf; Utah DAQ Comments on Section 179B draft guidance.pdf

FYI. Let's discuss.

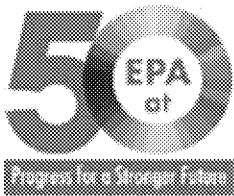
From: Sopkin, Gregory <sopkin.gregory@epa.gov>
Sent: Wednesday, March 11, 2020 5:47 PM
To: Idsal, Anne <idsal.anne@epa.gov>
Cc: Sethuraman, Jag <Sethuraman.Jag@epa.gov>
Subject: FW: Update on Draft Guidance on CAA Section 179B Demonstrations

Anne:

FYI, as discussed last week, we heard from stakeholders in Utah that they would appreciate more guidance regarding 179B demonstrations. Attached are the letters submitted to EPA by UDAQ and UPA/UMA yesterday regarding these issues, for OAR's consideration. Thank you.

Greg Sopkin
Regional Administrator
US EPA Region 8

Office: 303.312.6170
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From: Tonnesen, Gail <Tonnesen.Gail@epa.gov>
Sent: Wednesday, March 11, 2020 11:11 AM
To: Sethuraman, Jag <Sethuraman.Jag@epa.gov>
Cc: Daly, Carl <Daly.Carl@epa.gov>
Subject: FW: Update on Draft Guidance on CAA Section 179B Demonstrations

Hi Jag,

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Thanks,
Gail
312-6113

From: Keas, Ashley <keas.ashley@epa.gov>
Sent: Wednesday, March 11, 2020 9:27 AM
To: Young, Carl <young.carl@epa.gov>; Snyder, Erik <snyder.erik@epa.gov>; Liljegren, Jennifer <Liljegren.Jennifer@epa.gov>; Arra, Sarah <Arra.Sarah@epa.gov>; Vagenas, Ginger <Vagenas.Ginger@epa.gov>; Tonnesen, Gail <Tonnesen.Gail@epa.gov>; Dresser, Chris <Dresser.Chris@epa.gov>; Mays, Rory <Mays.Rory@epa.gov>; Christenson, Kara <Christenson.Kara@epa.gov>; Clark, Adam <Clark.Adam@epa.gov>; Lee, Anita <Lee.Anita@epa.gov>; Jackson, Scott <Jackson.Scott@epa.gov>; Boydston, Michael <Boydston.Michael@epa.gov>; Fulton, Abby <Fulton.Abbey@epa.gov>; Bohnenkamp, Carol <Bohnenkamp.Carol@epa.gov>
Cc: Palma, Elizabeth <Palma.Elizabeth@epa.gov>; Buchsbaum, Seth <buchsbaum.seth@epa.gov>; Henderson, Barron <henderson.barron@epa.gov>; Damberg, Rich <Damberg.Rich@epa.gov>; Ling, Michael <Ling.Michael@epa.gov>; Wilcox, Geoffrey <wilcox.geoffrey@epa.gov>
Subject: Update on Draft Guidance on CAA Section 179B Demonstrations

Hi everyone and happy Wednesday!

I wanted to provide a couple updates on the draft section 179B guidance for you all. (Feel free to forward if I missed anyone and please let me know if someone needs to be added/removed from this national workgroup list.)

Ex. 5 Deliberative Process (DP)

- 5) I'll be in touch once we in HQ have summarized the comments and compiled staff recommendations on how to address the comments in the guidance.

Let me know if you have any questions or comments in the meantime.
Thanks!

Ashley Keas, P.E.
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March 10, 2020

Scott Mathias, Acting Director, Air Quality Policy Division (C504-01)
Ashley Keas, Project Lead, Geographic Strategies Group, AQPD (C539-04)
United States Environmental Protection Agency
Research Triangle Park, NC 27711

Submitted electronically to Docket No. EPA-HQ-OAR-2019-0668 at Regulations.gov

Re: Comments from the Utah Petroleum Association and Utah Mining Association Regarding EPA's Draft "Guidance on the Preparation of Clean Air Act Section 179B Demonstrations for Nonattainment Areas Affected by International Transport of Emissions", Docket No. EPA-HQ-OAR-2019-0668

Dear Mr. Mathias and Ms. Keas:

The Utah Petroleum Association (UPA) and the Utah Mining Association (UMA) submit these comments on EPA's Draft "Guidance on the Preparation of Clean Air Act Section 179B Demonstrations for Nonattainment Areas Affected by International Transport of Emissions", Docket No. EPA-HQ-OAR-2019-0668. UPA and UMA appreciate the opportunity to present these comments. We thank EPA for opening the docket to stakeholders within the general public for comments on this important guidance.

UPA was founded in 1958 and is comprised of companies from every segment of the petroleum industry who work cooperatively to resolve mutual problems and provide a unified voice for the advancement and improvement of the oil and gas industry in Utah. UPA seeks to promote the responsible development of Utah's natural resources and manufacture of fuels that keep Utah's families and businesses moving. UPA's members include five companies that own and operate refineries – i.e., Big West, Chevron, HollyFrontier, Marathon Petroleum, and Silver Eagle – within the Northern Wasatch Front ozone nonattainment area. Additionally, our members include oil and natural gas production and related companies operating in the Uintah Basin ozone nonattainment area. Thus, UPA has an interest in air quality and specifically in this guidance document.

UMA represents mine operators and service companies who work to responsibly develop Utah's vast and diverse mineral resources. With advocacy, outreach, education, safety, and business development programs, the Utah Mining Association has served as the voice of Utah's mining industry since 1915. The Utah Mining Association represents multiple mine operations in non-

attainment areas throughout Utah, including Rio Tinto Kennecott which is one of the largest mines operating in a metropolitan area in the world. Therefore, UMA has a vested interest in ozone and other air quality issues, and, specifically, in this guidance document.

Many studies by EPA and in the published peer-reviewed literature have estimated the impact of global emissions on ozone air quality throughout the intermountain west. Most recently, EPA's November 2019 briefing to the Clean Air Act Advisory Committee (CAAAC) indicates a range of 10 to 20+ percent contribution of international anthropogenic sources to Utah¹ on the top ten total ozone modeled days and indicates that the intermountain west receives more long-range international transport. Natural emissions from international sources contribute additional ozone to local air quality. Dr. Jaffe et. al. state that ozone "formed from natural sources plus anthropogenic sources in countries outside the U.S., is greatest at high elevation locations in the western U.S."²

In 2013 testimony before the United States (U.S.) Congress, Amanda Smith, the then Executive Director of the Utah Department of Environmental Quality, said it best when she summed up the problem of background ozone including the impact of international emissions on the intermountain west:³

The 1990 Clean Air Act Amendments . . . included specific strategies and deadlines to solve an urban ozone problem that was primarily caused by mobile sources. Only recently, as ozone standards have become more stringent, has attention been given to background ozone in the Intermountain West. Recent research shows significantly higher impacts in the Intermountain West than in the rest of the country . . . Wildfires and stratospheric ozone intrusions also contribute significantly to background ozone levels and have a disproportionate impact on the Intermountain West. It is critical to recognize that the primary causes of high background ozone are beyond the control of the states. . . .

. . . . If the EPA moves forward with a more stringent [ozone] standard without workable measures to address background ozone, ***it will guarantee failure for Utah, leading to severe consequences for the state.*** . . .

. . . . The Department of Environmental Quality's mission is to safeguard public health and our quality of life by protecting and enhancing the environment. We take that mission seriously, and the public health impacts of ozone are important to address. We want to ensure that our efforts are ***focused on emission reduction strategies that are effective and appropriate in reducing ozone levels without requiring difficult, expensive measures that make no sense.*** Transportation-focused measures in small rural communities will not be effective, nor will overly stringent controls applied to remote industrial sources. ***Setting an ozone standard that can't be met won't improve public health in Utah.*** . . .

¹ Transboundary Air Pollution, Briefing for Clean Air Act Advisory Committee; November 7, 2019; EPA website at https://www.epa.gov/sites/production/files/2019-11/documents/international_transport.pdf (accessed on March 3, 2020), slide 5.

² Jaffe DA, Cooper OR, Fiore AM, et al. Scientific assessment of background ozone over the U.S.: Implications for air quality management. *Elementa (Wash D C)*. 2018;6(1):56. doi:10.1525/elementa.309.

³ Testimony before the Sub-Committee on Environment of the Committee on Science, Space and Technology; Amanda Smith, Executive Director, Utah Department of Environmental Quality; June 12, 2013.

. . . . Ozone levels in the intermountain west are not decreasing as much as would be expected based on the significant emission reductions that have occurred over the last twenty years. . . . Many of [the rural western national] parks, such as Canyonlands in Utah, are located far from any significant emission sources. . . . [O]zone values [in these parks] have remained fairly constant over the last 20 years and are routinely above the proposed range of 60 to 70 ppb (.060 to .070 ppm). It is also apparent . . . that ***the problem is widespread throughout the intermountain west*** and is not limited to parks that are close to urban areas or to energy-producing areas. [emphasis added]

Congress included § 179B in the Clean Air Act to address the impact of emissions that we within the U.S. cannot control, since we cannot effectively influence emissions – either anthropogenic or natural – from sources outside the boundaries of the U.S. The relief provided by the Clean Air Act in § 179B regarding international emissions will play an important role for Utah in implementing the 2015 National Ambient Air Quality Standard (NAAQS) for ozone and possibly for future NAAQS for ozone. Furthermore, it will be critical that EPA finalize this guidance document so that air agencies can effectively consider § 179B.

UPA and UMA submit the comments in this letter including the policy comments in Attachment A of this letter and the technical comments in Attachment B of this letter. The following summarizes some of the points in these attachments:

- Clean Air Act § 179B is not limited to international ***anthropogenic*** emissions. The failure of the draft guidance to affirmatively address ***natural emissions*** from international sources is a significant deficiency and should be addressed in the final guidance. International emissions from any type of source, anthropogenic or natural, are beyond the control of the U.S.
- Likewise, § 179B is not limited to border areas. Non-border areas are equally within the scope of relief intended by § 179B. As described above in Amanda Smith's testimony, the consideration of international emissions to the intermountain west through § 179B is critical for states like Utah to successfully address obligations under the Clean Air Act. Towards that end, EPA must maintain flexibility both in the analyses and supporting data it expects to see in § 179B demonstrations and in accepting the results of various studies as supporting evidence.
- EPA should be cautious about how it uses the terms "prospective" and "retrospective" to address the requirements of § 179B(a) and § 179B(b)-(d), respectively, to ensure it does not inadvertently limit the types of evidence and analyses for each type of demonstration. The demonstrations should more correctly be called "prospective relief demonstrations" and "retrospective relief demonstrations".
- EPA should accept demonstrations for prospective relief for Marginal nonattainment areas as long as the area completes an approvable attainment demonstration with supporting weight-of-evidence analyses.
- Much of the example information and lists of evidence in the draft guidance, while appropriate to address areas adjacent to the U.S. border, e.g. wind trajectories and emission comparisons, does not adequately address global ozone transport or areas well-

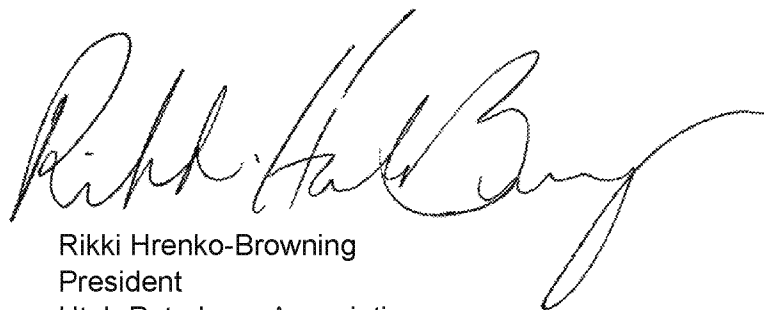
removed from U.S. borders. EPA needs to tailor these discussions accordingly and provide more focus on appropriate Relative Response Factor modeling (per its modeling guidance) along with source apportionment modeling, especially for ozone or PM_{2.5} demonstrations.

- EPA should temper its focus on day-specific analyses of all high ozone days during a specific 3-year design value period. Especially for areas situated in complex topography, analyses of global reach will be highly uncertain and ineffectual, while adequately resolved, well-performing, global-to-local photochemical modeling of all days of the design value period will be onerous and time-consuming given timelines for demonstration development, review, and approval.
- Some information recommended by the guidance such as the amount of the international contribution relative to the domestic contribution has no basis in § 179B and EPA should delete all such references. EPA should also delete references to irrelevant information that cannot be obtained reliably or accurately such as comparisons of international emission inventories or evaluations of controls required in other countries.

Again, UPA and UMA emphasize the critical importance of the § 179B guidance to our member companies and their operations throughout Utah and to the success of the State of Utah in responsibly implementing the 2015 ozone NAAQS and possibly for other future NAAQS. We thank EPA for considering our comments.

Given that most areas designated nonattainment for the 2015 ozone standard have an attainment date of August 3, 2021, we urge EPA to finalize the guidance as quickly as possible, ideally before the end of 2020, to allow air quality agencies with sufficient time to consider the final guidance, prepare § 179B demonstrations where appropriate, and obtain timely approval considering the short six-month time frame after attainment dates until the Clean Air Act would otherwise require bump-up to a higher nonattainment classification.

Best regards,



Rikki Hrenko-Browning
President
Utah Petroleum Association



Brian Somers
President
Utah Mining Association

Attachment A
Policy Comments Submitted Jointly by the
Utah Petroleum Association and the
Utah Mining Association

Policy Comments on EPA's January 2020 Draft Guidance on the Preparation of Clean Air Act Section 179B Demonstrations for Nonattainment Areas Affected by International Transport of Emissions

The Utah Petroleum Association (UPA) and Utah Mining Association (UMA) are pleased to submit these policy comments on EPA's January 2020 "Draft Guidance on the Preparation of Clean Air Act Section 179B Demonstrations for Nonattainment Areas Affected by International Transport of Emissions." UPA and UMA thank EPA and its staff for publishing the guidance and soliciting public feedback.

I. General Comments

Maintaining flexibility in § 179B demonstrations is critical from a technical perspective and necessary from a legal perspective. Regional differences in airsheds, topography, emission sources and international contributions render it impossible to establish a one-size-fits-all method of demonstrating international contributions to ambient concentrations of criteria pollutants. We support EPA's statements that § 179B demonstrations are not bound to rigid or formulaic evaluations of international contributions and that "air agencies may also use other well-documented, appropriately applied, and technically sound information and analyses not identified in this guidance" Guidance at 5. While the guidance provides important data and analytical methods, we agree it does not limit the ability of states to submit, or EPA to consider, analyses that rely on alternative methods.

UPA and UMA strongly support EPA's statement that the scope of relief available under § 179B is not limited to nonattainment areas that border Mexico or Canada. EPA correctly reiterated its position that non-border areas are eligible for regulatory relief under § 179B if they submit an adequate technical demonstration. Guidance at 5 n. 10, *citing* 83 Fed. Reg. 63010 (Dec. 6, 2018) *and* 80 Fed. Reg. 12294 (March 6, 2015).

Applications for relief by non-border areas should be evaluated fairly and should be held to the same legal standards as border areas. We encourage EPA to clarify its statement that "EPA recognizes that technical demonstrations for non-border areas may necessitate additional technical rigor and resources." Guidance at 5. Analyses for non-border areas will likely differ from border area analyses; however, they should not be subject to a higher standard of proof compared to border areas. Long distances between emission sources and their impacts pose technical challenges to using certain modeling platforms and analytical tools. This may make it appropriate in some cases to rely on different methodologies, but it does not follow that non-border demonstrations require additional rigor or resources. The statutory test is the same for all regions of the country. While UPA and UMA agree that technical demonstrations should be "high-quality," Guidance at 5, EPA's final guidance should remove any suggestions of skepticism or a higher burden of proof regarding the ability of non-border areas to demonstrate they would attain NAAQS standards but for international contributions.

Section 179B is not limited to anthropogenic international emissions. EPA has chosen to focus the guidance on accounting for international anthropogenic emissions. Guidance at 4-5. While this is an important part of the international contribution equation, EPA should and must provide a mechanism for allowing for an accounting of biogenic international emissions as well. The statutory text offers regulatory relief for “emissions emanating from outside of the United States.” The § 179B language on its face includes emissions from all foreign sources, whether anthropogenic or biogenic. The legislative history of the Clean Air Act supports this conclusion. Nowhere does it limit the application of § 179B to international anthropogenic emissions. “A Legislative History of the Clean Air Act Amendments of 1990” at 5740-42. The legislative history instead reveals that Congress wanted states to take action to improve air quality in nonattainment areas without penalizing them for emissions they could not control. The form of the ozone NAAQS also supports this conclusion because it treats domestic anthropogenic and biogenic emissions in the same way – both are included in the design value. International anthropogenic and biogenic emissions should also be treated identically – both are eligible for consideration under § 179B and EPA’s guidance must acknowledge this point.

Nor should states’ § 179B demonstrations need to describe international emission control measures. *See* Guidance at 18. We appreciate that the guidance requests this information only “where available.” Information about emission controls on other continents will not normally be available, will rarely be detailed, and may be uncertain and/or unreliable. EPA’s purpose and authority for requesting this information in the conceptual model of international influence is unclear. We ask EPA to focus instead on the quantity and characteristics of international emissions.

II. Prospective and Retrospective Relief

States should be allowed to use any technically appropriate data or analytical method for § 179B demonstrations. More specifically, states should be allowed to draw from prospective and retrospective analytic tools in both situations. We appreciate EPA’s discussion on page 3 of the two types of relief available under § 179B. As the guidance explains, § 179B(a) provides relief from the requirement to submit an attainment demonstration and § 179B(b) provides relief from reclassification. However, EPA’s use of the terms “prospective demonstrations” and “retrospective demonstrations” may cause confusion. The regulatory relief provided by § 179B is either prospective or retrospective, but the technical analysis often includes elements of both.

UPA and UMP ask EPA to clarify that in both cases states may use forward-looking and backward-looking analytic tools, and may use data that becomes available after the deadline for submitting an attainment demonstration. EPA may also consider using the terms “prospective relief demonstrations” and “retrospective relief demonstrations.”

III. Tools for Non-Border Areas to Demonstrate International Impacts

States and EPA may rely on global, national or regional scale modeling applications to demonstrate the impact of international emissions. EPA, other governmental agencies, and academic researchers have made substantial efforts to model the impact of international emissions. The draft

Guidance cites several studies of North American cross-border transport, including EPA's 2014 modeling of Canadian and Mexican contributions to U.S. pollution for the calendar year 2007 (performed for the 2015 ozone NAAQS Policy Assessment) and EPA's 2016 and 2018 modeling of regional ozone and particulate matter impacts (performed to support the Cross-State Air Pollution Rule and the Regional Haze Rule). Guidance at 7. The Guidance describes several published studies of global transport. Guidance at 7-9.

Such studies complement states' analyses of international emission contributions to specific nonattainment areas. These studies improve our understanding of air quality impacts and should be considered when evaluating the effect of international emissions. Existing regional or national scale modeling datasets from EPA or other agencies such as the Western States Air Resources Council and Western Regional Air Partnership (WESTAR/WRAP) should be allowed for use in 179B demonstrations as substitutes when local scale photochemical grid modeling datasets are unavailable, such as for Marginal ozone areas. In any case, regional and national modeling datasets should be applied using the EPA's Relative Response Factor approach and/or source apportionment to assess impacts from international emissions.

Attachment B
Technical Comments Submitted Jointly by the
Utah Petroleum Association and the
Utah Mining Association

Comments on

DRAFT Guidance on the Preparation of Clean Air Act Section 179B Demonstrations for Nonattainment Areas Affected by International Transport of Emissions

Ramboll reviewed the Environmental Protection Agency's (EPA) draft guidance on preparing demonstrations addressing Clean Air Act §179B and appreciates the opportunity to provide the following comments. We arranged our comments under three principal topics: (1) general; (2) demonstrations for non-border ozone nonattainment areas (NAA); and (3) photochemical modeling. The draft guidance presents well-developed recommendations for analyses that address NAAs adjacent to US borders with an emphasis on particulate matter (PM). However, we expect that many new 179B demonstrations will address international contributions to non-border ozone NAAs, given that the 2015 8-hour ozone standard approaches episodically high US background concentrations throughout the intermountain western US, as documented by EPA (2015b). Therefore, our comments primarily address this issue. Our suggestions are consistent with widely recommended and accepted practices, including EPA's (2018) modeling guidance for ozone, PM_{2.5} and visibility State Implementation Plans (SIP), EPA's numerous papers and reports on modeled contributions to US air quality (EPA, 2014, 2015b, 2016, 2018), and EPA's recent presentation on international contributions in the US to the Clean Air Act Advisory Committee in November 2019 (EPA, 2019).

1. General

1a) Guidance Downplays Prospective Demonstrations for Marginal Ozone Areas

On page 12 the guidance states, *"The air agency is not required to develop an attainment demonstration for an O₃ [ozone] nonattainment area classified as Marginal, and therefore EPA does not expect to receive section 179B(a) prospective demonstrations for such areas."* This is further emphasized in the Flow Chart under Section 4.2.3, which suggests EPA will not consider prospective demonstrations from Marginal NAAs. The phrase *"does not expect to receive"* leads to ambiguity in EPA's intentions.

We are aware that the Texas Commission on Environmental Quality (TCEQ) has prepared a prospective 179B (and attainment) ozone demonstration for the Marginal San Antonio NAA prior to the release of the draft guidance (TCEQ, 2020). As the TCEQ points out, the EPA 2008 Ozone SIP Rule states in the response to comments portion of the preamble (EPA, 2015a), *"...if a Marginal area (which is not otherwise required to submit an attainment demonstration) were to submit to the EPA a demonstration that they could attain the standard but for international emissions, the EPA would be able to evaluate that demonstration similarly to demonstrations submitted by higher classified areas."*

EPA should clearly state that it will consider prospective demonstrations from Marginal ozone NAAs and will not otherwise preclude or discourage such demonstrations. Based on the quote above from EPA (2015a), EPA should consider prospective demonstrations from Marginal NAAs as long as the area completes an approvable attainment demonstration and a supporting set of weight-of-evidence analyses.

1b) Comparing International and Domestic Contributions

On page 40 the guidance states, *"When results show that international contributions are larger on exceedance days and meaningfully larger than domestic contributions, the weight of evidence will be*

more compelling.” This statement suggests far more than described in the statute. An area only needs to demonstrate that it would attain a relevant air quality standard but for international contributions that are sufficient to cause continued exceedances. Therefore, the international contribution does not need to exceed the domestic contribution or be unusually high on exceedance days. This is especially true for secondary (chemically-formed) pollutants like ozone and components of PM_{2.5}. EPA should remove this statement from the guidance.¹

2. Demonstrations for Non-Border Ozone Nonattainment Areas

2a) Many Specific Recommendations Are Not Applicable

Section 6 of the draft guidance presents many specific analyses and well-developed examples that would support a 179B demonstration, but these are weighted toward addressing NAAs adjacent to the US border (understandably, given that only these types of demonstrations had been submitted by the date of draft guidance). By comparison, the guidance is vague in addressing ozone NAAs well removed from US borders that are affected by both cross-border transcontinental (i.e., Mexico and Canada) and intercontinental contributions, which we refer to collectively as global contributions. As discussed below, EPA needs to fill this gap with more specific recommendations and examples.

Many of the weight-of-evidence (WOE) analyses that EPA describes in Section 6.2 and 6.3 are not useful or applicable for assessing global ozone transport to NAAs in the intermountain West. In fact, three of the five analysis types listed in Table 1 “*Potential analyses to demonstrate international contribution*” (pages 24-25) are not meaningful if not impossible for such demonstrations. These include characterizing high ozone days as locally or internationally-influenced by wind analyses/trajectories back to international sources, comprehensive emission analysis, and chemical fingerprinting (which does not apply for ozone). We address specific analyses in our comments below.

2b) Wind and Trajectory Analyses Are Not Useful for Global Ozone Contributions

On page 29 the guidance states, “*The two most widely used analyses in section 179B demonstrations are in-situ wind analyses and trajectory analyses.*” That is certainly true for the few cross-border demonstrations that EPA has received over the years. The guidance appropriately discusses the weakness inherent in trajectory analyses on page 29. Specifically, the complex topography that is so prevalent throughout the western US contributes additional uncertainty for day-specific wind analyses. As the guidance points out on pages 8 and 29, readily available (off-the-shelf) meteorological analyses used by tools like HYSPLIT usually lack sufficient resolution to accurately assess the influence of local terrain on international ozone impacts in western US ozone NAAs. The guidance goes on to say on page

¹ Similarly, EPA’s comment on the proposed 179B demonstration for San Antonio prepared by the Texas Commission on Environmental Quality, “*We also believe your demonstration could be strengthened if it could be shown that San Antonio is impacted by international emissions in such a way that distinguishes it from other Marginal nonattainment areas in the country*” goes beyond statutory requirements. An area only needs to demonstrate that it would attain a relevant air quality standard but for international contributions that are sufficient to cause continued exceedances, and how that area compares or distinguishes from other nonattainment areas does not bear on whether the demonstration can or should be approved. EPA should not add anything to the guidance that would require or encourage such a comparison.

31, *“Trajectories are rarely conclusive on their own because they are individually subject to model configuration artifacts and represent probable trajectories.”*

The guidance emphasizes using such day-specific wind modeling to separate days when air parcels arriving in a given NAA have passed over international sources versus days when they do not. Such approaches are quite applicable for addressing contributions to cross-border PM (and perhaps ozone) NAAs. However, tracking contributions back from ozone NAAs in the intermountain west to global sources would be uninformative given the very ozone characteristics that the guidance raises on page 8 (i.e., the diffuse nature of ozone, long ozone chemical lifetime for global transport, ubiquitous global anthropogenic sources, mixing down from mid-tropospheric transport altitudes, etc.). These characteristics lead to some non-zero international contributions every day throughout the western US. In other words, given the chemical lifetime of ozone in the free troposphere, trajectories always extend back to other areas of the globe and may in fact circle the globe several times.

EPA should clarify that trajectory analyses are not particularly relevant to directly assess day-specific global contributions to ozone NAAs and especially unable to categorize days with global contributions versus those without. Instead, photochemical modeling (as further addressed in our comments below) should be emphasized to provide the most relevant information for ozone 179B demonstrations for such areas.

Separately, we note this related statement on page 8 of the draft guidance: *“The further a location is from an international source, in general, the less O₃ will be available to mix down.”* As it stands, this statement is too general in light of all the appropriate clarifying follow-on statements in the same paragraph regarding mixing interactions with planetary boundary layers and complex topography. The statement is particularly irrelevant when NAAs consider transport from all contributing international sources rather than just a single source. To improve clarity, EPA should strike the above quoted statement.

2c) Analyzing International Emission Inventories is not Useful for Assessing Day-to-Day Global Ozone Contributions

Section 6.3.2 describes comprehensive emission analyses to identify contributing international sources, their magnitude relative to local/domestic emissions, controls in place, expected emission trends, and any international agreements. With respect to ozone contributions from global anthropogenic sources, the utility of such exercises is unclear. For example, comparing NO_x and VOC precursor emissions in Beijing or all of China against emissions in specific NAAs or States or the entire US intermountain west has no bearing on the day-to-day contribution from global ozone transport. Emission inventories outside the US can be very uncertain, and usually represent estimates for a specific year well removed from the designation or attainment period of interest. Controls and future plans are generally unknowable for most of the world.

EPA should clarify that international emission analyses are not useful for determining day-to-day global ozone contributions. More generally, page 18 of the draft guidance states, *“Where available, a description of how controls on the upwind international anthropogenic sources differ from those required within the U.S. and how that difference could have affected the regulatory determination.”* It is not obvious how examining current controls on international sources relative to the US has any bearing on demonstrating that their emissions currently contribute to exceedances of local US standards. EPA should delete this statement from the guidance.

2d) Additional Recommendations

There is a large body of published literature and EPA reports on global international ozone contributions to the US, especially to the western states. Section 2.2 of the draft guidance lists examples of such studies and gives a succinct summary of findings. Key to these are the EPA (2015b) white paper discussion on background ozone for implementation of the 2015 ozone NAAQS, the recent extensive review by Jaffe et al. (2018), EPA involvement in the international HTAP/LRTAP² project (Dentener et al., 2010) and the NRC (2010) report on long-range transport of pollutants to and from the US. We suggest that EPA include a discussion in the guidance to recommend that summarizing the body of work regarding transport, with specific regard to the NAA in question, would add to the conceptual model and to the weight of evidence.

Finally, 179B demonstrations should be able to account for contributions from large global fire emissions. If EPA maintains its position that only anthropogenic international emissions are to be considered for 179B demonstrations, then EPA needs to provide additional guidance on how to identify contributions from large international anthropogenic fires separately from natural wildfires. While routine fire emissions from human activities may be included in international inventories, emissions from large fires around the world are added for global chemistry modeling using tools such as the Fire Inventory from NCAR (FINN; NCAR, 2020) based on daily satellite infrared detection of fire heat. However, the origin of these fires cannot be determined from these tools; the fires may be caused by agricultural/prescribed burning (such as tropical deforestation) or they may be natural wildfires.

3. Photochemical Modeling

3a) Guidance Should Explicitly Include the Relative Response Factor Approach

On page 37 the guidance states, modeling *“can be a good way to estimate the contribution of international emissions to monitors exceeding the NAAQS.”* Despite large uncertainties in many foreign emission sources as mentioned above, we contend that photochemical modeling is the only effective way to quantitatively estimate when and how much ozone is contributed by international and especially intercontinental transport to non-border NAAs. Furthermore, modeling is important to estimate contributions from the photochemical production of secondary nitrate and organic aerosols. EPA should stress the central role of photochemical modeling for addressing ozone demonstrations.

As the draft guidance appropriately states on page 39, *“Model contributions will be imperfect, and an estimate of a range should be considered and discussed in the context of the demonstration.”* We agree that model uncertainty is a key issue in attainment demonstrations and evaluations of source attribution. To account for uncertainties in modeling results, EPA’s current photochemical modeling guidance for ozone, PM_{2.5} and visibility SIPs (EPA, 2018) stresses the application of modeling results in a relative sense rather than an absolute sense. This is done through development of a modeled “relative response factor” (RRF) that projects a given design value to an alternative design value. However, the draft 179B guidance lacks any mention of the RRF approach, which would be particularly relevant for ozone and PM_{2.5} 179B demonstrations since they are parallel to attainment demonstrations. We note the TCEQ (2020) applied the RRF approach in their recent San Antonio ozone 179B demonstration, as did the California Air Resources Board (CARB, 2018) in their Imperial County ozone 179B demonstration,

² Hemispheric Transport of Air Pollutants (HTAP)/Long-Range Transport of Air Pollutants (LRTAP)

which EPA included in its final “Determination of Attainment by the Attainment Date” for that area (Federal Register, 2020).

We understand that since the draft 179B guidance references the 2018 SIP modeling guidance, recommended modeling approaches detailed in the latter implicitly apply to the former. For clarity, the draft 179B guidance should explicitly discuss the RRF approach and recommend its use when photochemical modeling is used for 179B demonstrations.

3b) Day-Specific Analyses for Ozone Demonstrations

On page 37 the guidance states, *“The applications described in the modeling guidance focus on SIP demonstration modeling, which is most directly applicable to the 179B(a) demonstration. For a 179B(b)-(d) demonstration, the observations and modeling would be from the attainment period rather than the designation period. ... For either type of demonstration, the technical approach is similar. Both benefit from day-specific evaluation... ”*. The guidance goes on to say, *“For prospective demonstrations, the modeling should use the same base case and future year, consistent with the SIP modeling.”*

The statements above regarding day-specific modeling are confusing. Depending on how the photochemical modeling platform is developed to support the local SIP, the modeling period and the resulting RRFs are commonly developed from a single season that often differs from, or is a subset of, the 3-year designation period. For example, in the TCEQ (2020) 179B demonstration the base year was 2012 to support other local Texas attainment demonstrations, RRFs were developed from modeled ozone differences between 2012 and the 2020 attainment year, and RRFs were applied to 2011-2013 design values (not from the 2016-2018 designation period) to project 2020 design values. Additionally, RRFs represent a single projection factor averaged over multiple high days in the base-year modeling period, and so the projections do not address day-specific contributions per se, and certainly not those in the designation period if that differs from the base-year modeling period. For prospective demonstrations, we suggest clarifying that day-specific contributions during the designation period are not the only acceptable type of analysis. We also suggest clarifying that photochemical modeling analyses using brute-force “zero-out” sensitivity with RRF and source apportionment techniques, addressing high concentration days within a single seasonal modeling period as projected to the attainment year, may be acceptable.

EPA makes a similar recommendation for retrospective day-specific analyses during the 3-years comprising the attainment period. Is EPA suggesting that photochemical modeling would be necessary to analyze each of the high ozone days over those three years? We assume that at the very least, such an approach would require the modeling to address the top 4 days over each year (12 total) going into the calculation of the local design value. We believe this would be an onerous and time-intensive undertaking when considering the enormous effort necessary to develop, evaluate and apply a highly-resolved regional photochemical modeling platform for a single season, as required for attainment modeling. To be parallel with prospective demonstrations, we suggest clarifying that day-specific contributions during the attainment period are not the only option. We further suggest that photochemical modeling analyses using brute-force “zero-out” sensitivity with RRF and source apportionment techniques for high concentration days within a single seasonal modeling period, projected forward or backwards (as applicable) to the attainment year, may be acceptable. If EPA persists in requiring day-specific analyses, then EPA should explicitly clarify how to conduct a day-specific retrospective modeling analysis – e.g., the minimum number of days that must be modeled for a successful demonstration.

3c) Consistency Between Global and Regional Models

On a minor note, page 38 of the guidance states, “Before estimating source contributions, the base case simulation should be able to reasonably reproduce historical exceedances and gradients between internationally influenced days and other days.” EPA’s use of the word “gradients” in this context is unclear, and should either clarify what is meant (i.e., typical, median or average differences?) or choose a more applicable word.

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